

U.S. Patent Application

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LIQUID HOLDING VESSEL WITH  
SEPARATELY ATTACHED HANDLE

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Inventor(s): Yiu Ching Liu

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FIELD OF THE INVENTION

10 The present invention relates to vessels for drinking  
or holding liquids. More specifically, the present  
invention relates to double walled vessels that may have a  
seamless construction or a separately attached handle or  
other feature.

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BACKGROUND OF THE INVENTION

Vessels used in drinking or holding liquids include  
single and double walled tea and coffee cups and the like  
that have handles. These vessels may be made of plastic,  
ceramic, metal or other materials.

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In the case of vessels that have a plastic exterior  
or "shell" and an integrally formed handle, these vessels  
will always have a fabrication "seam" that is visible on  
their exterior surface, typically running vertically from  
top to bottom. This seam is an artifact of the separation  
25 of the mold components used to shape the plastic, and may  
be regarded as an undesirable blemish on the exterior  
surface of the vessel.

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With respect to non-integrally formed handles, these  
handles typically require machining into or through the  
plastic shell to mount the handle to the side of the  
vessel. The prior art does include vessels with handles  
that attach towards the top of the vessel and descend  
downward. In these vessels, the plastic shell is usually

compromised by drilling to mount the handle through the plastic.

A need exists for a fluid holding vessel that has a handle and a seamless, uncompromised plastic exterior. A need also exists for a vessel that incorporates bottom handle attachment. A need further exists for a vessel that achieves an efficient, economical design and an attractive appearance.

10                    SUMMARY OF THE INVENTION

The present invention is directed towards providing a liquid holding vessel that overcomes the shortcomings of the prior art and delivers other beneficial features.

15            In one embodiment, a liquid holding vessel of the present invention may include a liquid holding member having an exposed exterior surface formed of plastic with no visible seam; a separately formed handle that is coupled to the liquid holding member at a bottom region thereof; and a base member coupled substantially below the liquid holding member and the handle. These components may be joined by a single fastener, and the liquid holding member need not be formed of plastic. The handle may have a free-standing user end.

25            In another embodiment, a liquid holding vessel of the present invention may include a shell formed of plastic; a lining formed separately from the shell and positioned at least in part within the shell; a handle member extending from a base region of the vessel; and a base member fixedly coupled to at least one of the shell and lining in such a manner as to secure the handle.

30            These and related objects of the present invention are achieved by use of a liquid holding vessel with separately attached handle as described herein. Note that

the above described embodiments are merely illustrative and not limiting.

The attainment of the foregoing and related advantages and features of the invention should be more readily apparent to those skilled in the art, after review of the following more detailed description of the invention taken together with the drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

10 Figs. 1 and 2 are unexploded and exploded cross-sectional side views of a liquid holding vessel in accordance with the present invention.

Fig. 3 is a top view of the handle of the vessel of Figs. 1 and 2.

15 Fig. 4 is a cross-sectional side view of an alternative embodiment of a liquid holding vessel in accordance with the present invention.

Fig. 5 is a plan view of the liquid holding vessel of Figs. 1 and 2.

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#### DETAILED DESCRIPTION

Referring to Figs. 1 and 2, unexploded and exploded cross-sectional side views of a liquid holding vessel 10 in accordance with the present invention are respectively shown.

25 Vessel 10 includes a liquid holding member 18 configured to hold a liquid. The liquid holding member may be single walled as in Fig. 4 below or double walled. The double walled embodiments, shown for example in Figs. 1 and 2, may include a shell 20 and a lining 30 preferably, but not necessarily, separated at least in part by a gap 19. Gap 19 preferably has insulative value and may be air filled or filled with an insulative material such a foam

or other suitable material. Several suitable insulative materials are known in the art. Vessel 10 may also include a handle member 40 and a base member 50.

5 Shell 20 may be formed of any suitable material (metal, plastic, ceramic, etc.), though in at least one embodiment shell 20 is formed of plastic. Various plastic materials and fabrication techniques are known in the art. A fabrication technique in which shell 20 is formed without a seam in its exposed exterior surface is  
10 preferred, e.g., the side wall is seamless. Injection molding techniques that accomplish this objective are known in the art. Shell 20 may include a fastener opening 22 or other opening in a bottom section thereof.

Lining 30 is preferably formed of a metallic  
15 material. Suitable metallic materials include stainless steel, aluminum, titanium, alloys thereof (e.g., tin) and any other food safe metal. Advantageous aspects of stainless steel include that it provides structural integrity, resists stains, may be cleaned to a high  
20 sanitary standard and is relatively affordable. Accordingly, stainless steel may be more preferred in some embodiments or applications.

It should be recognized that lining 30 may also be made of other material. For example, lining 30 may be  
25 formed of any suitable plastic or other material. Suitable plastics for lining beverage containers are known in the art.

Lining 30 preferably has a lip 31 that extends over the top edge of shell 20 into a circumferentially disposed  
30 recess or indentation 21 formed in the outer top edge of the shell. This configuration serves to secure the top of shell 20 to the top of lining 30 when the shell is pushed into back folded lip 31 (for example, due to the force

exerted by fastener 60 discussed below). This configuration also achieves a certain visual effect with a top border (and bottom border from base member 50) and may protect the top edge of the shell from damage during a fall.

Lining 30 may have a fastener receiving member 33 attached at a bottom region thereof. This member may be welded (if metallic), glued, press fit, or otherwise attached to the lining and may include a threaded or otherwise configured section 34 for receiving a threaded fastener or a rivet or another type of fastener (or provide a surface for gluing, etc.).

Handle 40 is preferably formed of a metallic material, and more preferably stainless steel, but any suitable metal (including those discussed above and others), plastic, wood or other material may be used. Handle 40 may include a user section 41 and an attachment section 42. User section 41 has a configuration that permits grasping and holding by the fingers or hand of a user.

Attachment end 42 may have any suitable configuration, though in the embodiment of Figs. 1 and 2 has a mounting portion 44 with two bore openings 45. These bore openings each receive a mounting protrusion 25 that descends from and is preferably integrally formed with the shell. As discussed in more detail below, mounting portion 44 is pushed onto protrusions 25 and "sandwiched" between the bottom of the shell and the base plate of base member 50 (see below). In this manner, handle 40 is securely held. While the protrusion and corresponding bore opening arrangement is advantageous in simplicity of assembly, it should be recognized that (1) other protrusion-opening arrangement may be utilized, including protrusion(s)

originating on the base plate or mounting portion, and (2) handle 40 may be glued or screwed or otherwise attached to shell 20.

Handle 40 may include a bent portion 47 where the handle transitions from the attachment section 42 to the user section 41. In bent portion 47, the handle may bend upward and outward over a base member discussed below and through a complementary channel 27 provided in shell 20.

As a bottom attached handle, handle 40 provides a different feel than a top mount handle. Handle 40 may be regarded as providing a more balanced feel because more fingers are typically involved in holding a bottom mount handle than a top mount handle.

A base member 50 may be provided substantially below the shell, lining and handle. Base member 50 may include a side wall or lip 51, a base plate 52, a fastener recess 54, and a fastener opening 55. A fastener 60 may be provided in recess 54 and aligned with fastener openings 55 in the base member and fastener opening 22 in the shell. Fastener 60 is threaded into or otherwise mounted into fastener receiving member 33 to attached to lining 30. As fastener 60 is tightened, base member 50 is pulled towards the lining, thereby securing the base member and lining onto the shell and securing the mounting portion of handle 40 onto protrusions 25 (via the mounting force exerted by base plate 52). This configuration achieves a mounting of four components with a single fastener.

Figs. 1 and 2 illustrate a base member with side walls that ascend upward into a bottom circumferential groove or recess 28 in shell 20 (similar to recess 21). Recess 28 is not shown in the lower right hand corner of Fig. 1 because channel 27 is present for the width of handle 40. Recess 28 permits side wall 51 and the shell

exterior to be generally flush, if desired. Side wall 51 also creates paired trim with lip 21. Nonetheless, it should be recognized that side wall 51 is optional and base member 50 could terminate with base plate 52 or be  
5 otherwise configured.

Base member 50 may have a fastener seal 58 provided over fastener 60 to effectively hide the fastener. This seal prevents users from tampering with the fastener and may provide a desired cosmetic finish. Various seals,  
10 including adhesive attached metal foil seals, are known in the art. Base member 50 may also include a recess 59 that accommodated a non-skid pad 70. The non-skid pad may be provided whether or not there is a corresponding recess, and various non-skid pad materials, shapes and mounting  
15 techniques are known in the art. Pad 70 in Figs. 1 and 2 has an open-disk or "donut" shape.

Referring to Fig. 3, a top view of handle 40 of Figs. 1 and 2 is shown. Fig. 3 illustrates bore openings 45 in mounting portion 44. It also illustrates features of user  
20 section 41 and bent portion 47.

Referring to Fig. 4, a cross-sectional side view of another embodiment of a liquid holding member 80 in accordance with the present invention is shown. Vessel 80 includes a liquid holding member 82 that is single walled  
25 and may be made of plastic, ceramic, metal or other material. In one embodiment, member 82 includes an exposed side wall 84 that is made at least in part of plastic and formed in such a manner as to have no visible seams. A lip 81 may optionally be provided at the top of the liquid  
30 holding member (crimped and/or glued in place) for protection or aesthetics, etc.

A fastener receiving member 83 is preferably attached to the liquid holding member 82 for receiving a fastener



60 and handle mounting protrusion 85 (like protrusions 25) are preferably provided for attaching handle 40.

The handle 40 and base member 50 may be formed as discussed above. In this embodiment, the three principal  
5 components (the liquid holding member, handle and base member) may be securely joined by a single fastener. The liquid holding member, if made of plastic, may also be formed with a seamless exposed exterior, yet possess a handle.

10 A fastener, seal and non-skid pad 58,70 (such as those discussed with reference to Figs. 1 and 2) may be provided.

Referring to Fig. 5, a plan view of vessel 10 of Figs. 1 and 2 is shown. Fig. 5 illustrates a circular  
15 shape, though other shapes are suitable. Lining 30 and top lip 31 are shown as is the user section 41 of handle 40.

The present invention as described herein provides may beneficial features and advantages. These include, but are not limited to, provision of a liquid holding vessel  
20 that may have a seamless or otherwise uncompromised exterior, that may have principal components joined with a single fastener and that may possess and an attractive appearance and efficient design.

While the invention has been described in connection  
25 with specific embodiments thereof, it will be understood that it is capable of further modification, and this application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures  
30 from the present disclosure as come within known or customary practice in the art to which the invention pertains and as may be applied to the essential features

hereinbefore set forth, and as fall within the scope of the invention and the limits of the appended claims.